

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Musculoskeletal system

Test bank pathology

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Which one of the following statements best characterizes degenerative joint disease of bone?

- A. Insidious and increase with age. ✓
- B. Avascular necrosis is a common complication of severe cases.
- C. Pannus formation is characteristic.
- D. Primary disease of the synovium

Fibromatosis causes death by:

- A. Destruction of distant sites through metastasis
- B. Infiltration and local destruction ✓
- C. Malignant proliferation of fibroblasts
- D. Benign proliferation with no recurrence

Pseudogout of the joint characterized by?

- A. Only acute attacks of joint pain and swelling.
- B. Deposition of negative birefringent needle shaped crystals
- C. Ulnar deviation and swan neck deformity in most cases
- D. Leukocytosis and febrile illness in affected patients
- E. Geometric and rhomboid crystals in joint space ✓

Which of the following statements best describes synovial sarcoma?

- A. Highly anaplastic sarcoma with frequent lung metastasis
- B. Only found around the synovial joints
- C. Optimum treatment is by appropriate chemotherapy.
- D. Translocation (X;18) (p11; q11) is a characteristic finding ✓
- E. Biphasic benign tumor

A 45-year-old man came to your clinic with severe big toe pain and swelling. No history of trauma was mentioned. Aspiration of the big toe interphalangeal joint revealed needle shaped crystals with negative birefringence. The most likely diagnosis is:

- A. Osteoarthritis
- B. Acute Gouty arthritis ✓
- C. Sero-negative Reiter disease
- D. Rheumatoid arthritis

which of the following is not true about gouty arthritis:

- A. tophi are found only in joints. ✓
- B. tophi in the articular cartilage

Morning stiffness that worsens with walking, diminished joint space and presence of osteophytes describes:

- A. Osteosarcoma
- B. Rheumatoid arthritis
- C. Paget disease
- D. Degeneration of articular cartilage ✓

You are evaluating a 65-year-old female patient who came with right hip joint pain. The Rheumatoid factor is negative. No other joints are affected, and the patient recalled recent eye disease requiring frequent ophthalmological evaluation. No skin manifestation or urinary abnormalities noted. Bone MRI revealed right sacroiliac joint fusion. Serum HLA typing was positive for HLA B-27. What is your best diagnosis?

- A. Sero-negative rheumatoid arthritis
- B. Ankylosing spondylitis ✓
- C. Psoriatic arthritis
- D. Mono-ostotic osteoarthritis

A 60-year-old man came to the emergency and complained of pain in his joints. He denied that he had been exposed to such situations before, and when he was examined, it was found that the presence of positive birefringence, Imagine yourself in the place of the emergency doctor. What is the best diagnosis you can give?

- A. Acute gout arthritis
- B. Acute pseudogout ✓
- C. Rheumatoid arthritis

In contrast to lipomas, liposarcomas are?

- A. Larger masses, commonly in the thigh and retroperitoneum ✓
- B. Treated mainly by chemotherapy alone.
- C. The most common soft tissue tumors
- D. Usually smaller in size

A 65-year-old woman presents with multiple hand joint pain and swelling. She complains of morning joint stiffness that improves slowly after initial movements. Bilateral ulnar deviation was noted on examination. Which one of the following tests will confirm your top differential diagnosis?

- A. Arthroscopic examination
- B. Rheumatoid factor ✓
- C. High resolution X-ray of the hands and the feet
- D. Joint fine needle aspiration fluid examination

11-year-old boy who came with precocious puberty and multiple endocrine glands abnormalities. What is the most likely diagnosis?

- A. Leontiasis ossea / platybasia
- B. McCune-Albright syndrome ✓
- C. Multiple hereditary chondromatosis
- D. Familial Paget disease of bone

The earliest change in osteoarthritis affects:

- A. Cartilage ✓
- B. Bone
- C. Skeletal muscles
- D. Mesothelium
- E. Tendons

Which of the following represents the correct order of events in rheumatoid arthritis:

- A. Activated B-lymphocyte - secretory plasma cell - activate T- lymphocyte
- B. Activated T-lymphocyte - activate B-lymphocyte - secretory plasma cell - rheumatoid factor ✓
- C. Activated macrophage - activated B-lymphocyte - rheumatoid factor

Fibromatoses diseases are best characterized by:

- A. Easy surgical excision with low recurrence rate
- B. Fibroblast growth factor receptor 3 mutations
- C. Locally destructive and infiltrative lesions ✓
- D. Highly pleomorphic cells under the microscope

A 13-year-old boy was brought by his parents with right forearm pain and swelling. Imaging showed an infiltrative diaphyseal tumor with two Codman triangles one proximal and one distal. The fine needle aspiration smears revealed numerous small tumor cells with high nuclear cytoplasmic ratio. The molecular signature abnormality of this tumor is?

- A. $t(11;22)(p24;q12)$ ✓
- B. MDM2 translocation
- C. $t(x;18)(p12;q15)$
- D. Point mutation of osteoblast P53 tumor suppressor gene

Patient with small fractures, a lot of small blue cell tumors were found. What do you expect?

• Answer: translocation (11,22) (q24;q12)

A 10-year-old boy is brought to his pediatrician's office by his parents because of worsening pain over his left lower leg for the past 2 months. He denies any recent trauma to his leg within the past year and has been generally healthy. Physical examination shows a discrete, hard, and exquisitely tender mass over the anterior aspect of the right tibia about 3 inches below the knee. ESR today is 20mm/hr. An X-ray of this patient's left leg is shown.

- A. Stress fracture
- B. Osteosarcoma
- C. Ewing's sarcoma ✓

A 7-year-old girl comes to the emergency department after falling on her wrist at the playground at school. She has a history of fractures, and expresses pain of her left wrist. Physical examination shows visible scoliosis and large light brown segmental patches of hyperpigmentation with jagged borders across her left upper chest that does not cross the midline. Which of the following is the most likely diagnosis?

- A. Tuberos sclerosis
- B. McCune-Albright syndrome ✓
- C. Neurofibromatosis Type 2

A 55-year-old woman that is post-menopausal comes to the clinic because of persistent right knee pain. She reports stiffness in the morning of the right knee more than the left with resolution after about 30 minutes. She also states that the pain is worst at night just before bed. Her temperature is 37.1°C (98.8°F), pulse is 66/min, respirations are 14/min, and blood pressure is 128/78 mm Hg. A radiograph is obtained of both knees and shows osteophyte formation, asymmetric joint space narrowing, and sclerosis of the right knee with only asymmetric joint space narrowing of the left knee. Which of the following is most likely degraded initially in the pathogenesis of this condition?

- A. nothing
- B. Mineralized bone
- C. Non-collagenous proteins
- D. Type I collagen
- E. Type II collagen ✓

A 45-year-old woman comes to the office because of pain, stiffness, and swelling of the small joints of the hands and feet for 3 months. She also has increasing fatigue that has caused her to miss work at least 1 day per week. She has no other medical problems. Physical examination shows the vital signs are within the normal range. A photograph of one of her hands is shown. Complete blood count, serum chemistries, and urinalysis are all normal. Erythrocyte sedimentation rate is elevated at 44 mm/h and there is a nonsuppurative & proliferative inflammation. Which of the following is the most likely diagnosis?

- A. Osteoarthritis
- B. Psoriatic arthritis
- C. Rheumatoid arthritis ✓
- D. Systemic lupus erythematosus

How can an X-ray help a healthcare provider diagnose osteoarthritis?

- A. It can show cartilage loss
- B. It can show bone damage
- C. It can show bone spurs
- D. All of the above ✓

A 74-year-old, obese woman (BMI = 33 kg/m²) complains of chronic pain in her back, knees, and fingers. The pain typically subsides at rest. On physical examination, the distal interphalangeal joints are enlarged and tender. Which of the following best describes the pathogenesis of joint pain in this patient?

- A. Acute inflammation of the ligaments
- B. Degeneration of articular cartilage ✓
- C. Degenerative changes of cortical bone

Which of these makes it more likely to get osteoarthritis?

- A. Young age
- B. Excess body weight ✓
- C. Too little body weight

Which of these medicines is used to treat osteoarthritis?

- A. Aspirin
- B. Acetaminophen
- C. Corticosteroid injections
- D. All of the above ✓

A 60-year-old woman with arthritis suffers a massive stroke and expires. At autopsy, the proximal phalangeal joint tissue shows pannus, synovial cell hyperplasia, and lymphoid follicles. Which of the following best describes the pathogenesis of pannus formation in this patient?

- A. Calcification of the synovium
- B. Chronic inflammation of synovium ✓
- C. Degeneration of cartilage
- D. Dislocation of a portion of bone

Surgery can sometimes be done to treat arthritis.

- A. True ✓
- B. False

A 52-year-old man comes to the emergency department because of joint swelling, pain, and trouble walking. Physical examination shows his right knee is swollen and tender to palpation. An aspiration of the joint shows calcium pyrophosphate crystal accumulation. Which of the following findings will most likely be found upon microscopic examination of the synovial fluid?

- A. Elevated eosinophils
- B. Envelope-shaped crystals
- C. Less than 1,000/uL white blood cells
- D. Negatively birefringent needle shaped crystals
- E. Positively birefringent rhomboid crystals ✓